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08/4

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RAW SEQUENCE LISTING

DATE: 08/12/2002

PATENT APPLICATION: US/09/712,338

TIME: 14:59:36

Input Set : A:\4990210 SEQLIST.TXT

Output Set: N:\CRF4\08122002\I712338.raw

```

4 <110> APPLICANT: Blinkovsky, Alexander
5     Berka, Randy
6     Rey, Michael
7     Golightly, Elizabeth
8     Klotz, Alan
9     Mathisen, Thomas Erik
10    Dambmann, Claus
12 <120> TITLE OF INVENTION: Carboxypeptidases And Nucleic Acids
13    Encoding Same
15 <130> FILE REFERENCE: 4990.210-US
17 <140> CURRENT APPLICATION NUMBER: 09/712,338
C--> 18 <141> CURRENT FILING DATE: 2002-08-08
19 <150> PRIOR APPLICATION NUMBER: 08/943,714
21 <151> PRIOR FILING DATE: 1997-10-03
23 <150> PRIOR APPLICATION NUMBER: 08/726,880
24 <151> PRIOR FILING DATE: 1996-10-04
26 <150> PRIOR APPLICATION NUMBER: PCT/DK97/00230
27 <151> PRIOR FILING DATE: 1997-05-20
29 <150> PRIOR APPLICATION NUMBER: PA 1996 00585
30 <151> PRIOR FILING DATE: 1996-05-20
32 <160> NUMBER OF SEQ ID NOS: 12
34 <170> SOFTWARE: FastSEQ for Windows Version 4.0
36 <210> SEQ ID NO: 1
37 <211> LENGTH: 1668
38 <212> TYPE: DNA
39 <213> ORGANISM: Aspergillus oryzae
41 <400> SEQUENCE: 1
42 atgcgtggct acgaatttct ctcagtgccta cccttggttg cagccagttg ggcccttcca      60
43 ggaagtacac cggcgctccgt cggtagaaga cagctaccca agaaccacac cggggtcaag      120
44 actcttacaa ccgcaaacaa tgtcaccatc cgggtacaagg aaccgggggc agagggcgtc      180
45 tgcgagacta ccccggtgtt caaatcctac tctggatatg tgcgacacct tcccgagtcc      240
46 cataccttct tctggttctt cgaagccaga cataaaccag aaactgcacc tatcacattg      300
47 tgggtgaatg gtggccctgg aagcgattct ttgatcggtc tcttcgaaga gttgggccct      360
48 tgccatgtca attcgacttt tgatgactac atcaaccctc actcgtggaa cgaggtctcc      420
49 aatttactat tcctgtccca gccattggga gtcggttttt catatagtga tacggttgat      480
50 ggggccatta accctgtaac tggggtcgtc gaaaattcga gctttgcagg agttcagggc      540
51 cggtacccaa ccattgatgc cactctgatc gatactacca atcttgccgc agaggccgct      600
52 tgggagatcc tgcaaggatt ccttagtgga ctacctagct tggactctag ggtgcagtct      660
53 aaggacttca gtctatggac ggagagctat ggaggggact atgggtcctgc attcttcaat      720
54 catttttacg agcagaatga gagaattgcc aacggtagtg ttaatggtgt tcagcttaat      780
55 ttcaactctc tgggaattat taacggcatc atcgacgagg cgatccaggc cccttactac      840
56 cctgaattcg ctgtgaacaa tacctacggt atcaaggctg tcaacgagac cgtctacaac      900
57 tacatgaagt ttgccaacca aatgccaaat ggttgccagg atttgatttc cacctgcaaa      960

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58 cagacaaacc gcaccgcatt agctgactac gccctctgcg ccgaagccac caacatgtgc 1020
59 agggacaatg ttgagggggcc atactacgcc tttgctggtc gtggtgtgta tgatattcgg 1080
60 catccatatg atgacccgac tccgccaagt tattacaaca aatttctggc aaaggactct 1140
61 gtcattggacg ctatcggcgt caacatcaac tacacccagt ccaataatga cgtctactac 1200
62 gctttccagc aaacaggcga ctttgtctgg cccaacttca tcgaagacct cgaggagatc 1260
63 cttgctctcc ccgtgcgtgt ctccctcatc tatggcgacg ccgattacat ctgcaactgg 1320
64 ttcggcggtc aggccgtttc cctcgtctgc aactactccc aagccgccc gttccgaagc 1380
65 gcagggtaca cgcccctgaa agtcaacggc gtcgagtatg gggaaactcg cgagtatggt 1440
66 aatttctcct tctactcgcgt ctatgaggca ggccatgaag tcccatacta ccagcccatc 1500
67 gcctccctgc aattgtttaa ccggactatc ttcggttggg atatcgcaga gggccagaag 1560
68 aagatctggc ccagctacaa gacgaatgga acggctacag ctacgcatac acagtcgtcc 1620
69 gtgccgtgct ctacggctac cagcatgtcc agtggttgta tggcatag 1668

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71 <210> SEQ ID NO: 2

72 <211> LENGTH: 555

73 <212> TYPE: PRT

74 <213> ORGANISM: Aspergillus oryzae

76 <400> SEQUENCE: 2

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77 Met Arg Gly Tyr Glu Phe Leu Ser Val Leu Pro Leu Val Ala Ala Ser
78 1 5 10 15
79 Trp Ala Leu Pro Gly Ser Thr Pro Ala Ser Val Gly Arg Arg Gln Leu
80 20 25 30
81 Pro Lys Asn Pro Thr Gly Val Lys Thr Leu Thr Thr Ala Asn Asn Val
82 35 40 45
83 Thr Ile Arg Tyr Lys Glu Pro Gly Ala Glu Gly Val Cys Glu Thr Thr
84 50 55 60
85 Pro Gly Val Lys Ser Tyr Ser Gly Tyr Val Asp Thr Ser Pro Glu Ser
86 65 70 75 80
87 His Thr Phe Phe Trp Phe Phe Glu Ala Arg His Asn Pro Glu Thr Ala
88 85 90 95
89 Pro Ile Thr Leu Trp Leu Asn Gly Gly Pro Gly Ser Asp Ser Leu Ile
90 100 105 110
91 Gly Leu Phe Glu Glu Leu Gly Pro Cys His Val Asn Ser Thr Phe Asp
92 115 120 125
93 Asp Tyr Ile Asn Pro His Ser Trp Asn Glu Val Ser Asn Leu Leu Phe
94 130 135 140
95 Leu Ser Gln Pro Leu Gly Val Gly Phe Ser Tyr Ser Asp Thr Val Asp
96 145 150 155 160
97 Gly Ser Ile Asn Pro Val Thr Gly Val Val Glu Asn Ser Ser Phe Ala
98 165 170 175
99 Gly Val Gln Gly Arg Tyr Pro Thr Ile Asp Ala Thr Leu Ile Asp Thr
100 180 185 190
101 Thr Asn Leu Ala Ala Glu Ala Ala Trp Glu Ile Leu Gln Gly Phe Leu
102 195 200 205
103 Ser Gly Leu Pro Ser Leu Asp Ser Arg Val Gln Ser Lys Asp Phe Ser
104 210 215 220
105 Leu Trp Thr Glu Ser Tyr Gly Gly His Tyr Gly Pro Ala Phe Phe Asn
106 225 230 235 240
107 His Phe Tyr Glu Gln Asn Glu Arg Ile Ala Asn Gly Ser Val Asn Gly
108 245 250 255

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```

109 Val Gln Leu Asn Phe Asn Ser Leu Gly Ile Ile Asn Gly Ile Ile Asp
110          260          265          270
111 Glu Ala Ile Gln Ala Pro Tyr Tyr Pro Glu Phe Ala Val Asn Asn Thr
112          275          280          285
113 Tyr Gly Ile Lys Ala Val Asn Glu Thr Val Tyr Asn Tyr Met Lys Phe
114          290          295          300
115 Ala Asn Gln Met Pro Asn Gly Cys Gln Asp Leu Ile Ser Thr Cys Lys
116 305          310          315          320
117 Gln Thr Asn Arg Thr Ala Leu Ala Asp Tyr Ala Leu Cys Ala Glu Ala
118          325          330          335
119 Thr Asn Met Cys Arg Asp Asn Val Glu Gly Pro Tyr Tyr Ala Phe Ala
120          340          345          350
121 Gly Arg Gly Val Tyr Asp Ile Arg His Pro Tyr Asp Asp Pro Thr Pro
122          355          360          365
123 Pro Ser Tyr Tyr Asn Lys Phe Leu Ala Lys Asp Ser Val Met Asp Ala
124          370          375          380
125 Ile Gly Val Asn Ile Asn Tyr Thr Gln Ser Asn Asn Asp Val Tyr Tyr
126 385          390          395          400
127 Ala Phe Gln Gln Thr Gly Asp Phe Val Trp Pro Asn Phe Ile Glu Asp
128          405          410          415
129 Leu Glu Glu Ile Leu Ala Leu Pro Val Arg Val Ser Leu Ile Tyr Gly
130          420          425          430
131 Asp Ala Asp Tyr Ile Cys Asn Trp Phe Gly Gly Gln Ala Val Ser Leu
132          435          440          445
133 Ala Ala Asn Tyr Ser Gln Ala Ala Gln Phe Arg Ser Ala Gly Tyr Thr
134          450          455          460
135 Pro Leu Lys Val Asn Gly Val Glu Tyr Gly Glu Thr Arg Glu Tyr Gly
136 465          470          475          480
137 Asn Phe Ser Phe Thr Arg Val Tyr Glu Ala Gly His Glu Val Pro Tyr
138          485          490          495
139 Tyr Gln Pro Ile Ala Ser Leu Gln Leu Phe Asn Arg Thr Ile Phe Gly
140          500          505          510
141 Trp Asp Ile Ala Glu Gly Gln Lys Lys Ile Trp Pro Ser Tyr Lys Thr
142          515          520          525
143 Asn Gly Thr Ala Thr Ala Thr His Thr Gln Ser Ser Val Pro Leu Pro
144          530          535          540
145 Thr Ala Thr Ser Met Ser Ser Val Gly Met Ala
146 545          550          555
148 <210> SEQ ID NO: 3
149 <211> LENGTH: 20
150 <212> TYPE: PRT
151 <213> ORGANISM: Aspergillus oryzae
153 <220> FEATURE:
154 <221> NAME/KEY: VARIANT
155 <222> LOCATION: (1)...(20)
156 <223> OTHER INFORMATION: Xaa = Any Amino Acid
158 <400> SEQUENCE: 3
W--> 159 Xaa Tyr Gly Gly His Tyr Gly Pro Ala Phe Phe Asn His Phe Tyr Glu
160 1          5          10          15

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```

161 Gln Asn Glu Arg
162      20
164 <210> SEQ ID NO: 4
165 <211> LENGTH: 19
166 <212> TYPE: PRT
167 <213> ORGANISM: Aspergillus oryzae
169 <220> FEATURE:
170 <221> NAME/KEY: VARIANT
171 <222> LOCATION: (1)...(19)
172 <223> OTHER INFORMATION: Xaa = Any Amino Acid
174 <400> SEQUENCE: 4
W--> 175 Asp Ala Ile Gly Val Asn Ile Xaa Tyr Thr Gln Xaa Asn Asn Asp Val
      176 1      5      10      15
      177 Tyr Tyr Ala
      180 <210> SEQ ID NO: 5
      181 <211> LENGTH: 35
      182 <212> TYPE: PRT
      183 <213> ORGANISM: Aspergillus oryzae
      185 <400> SEQUENCE: 5
      186 Asp Ala Ile Gly Val Asn Ile Asn Tyr Thr Gln Ser Asn Asn Asp Val
      187 1      5      10      15
      188 Tyr Tyr Ala Phe Gln Gln Thr Gly Asp Phe Val Trp Pro Asn Phe Ile
      189      20      25      30
      190 Glu Asp Leu
      191      35
      193 <210> SEQ ID NO: 6
      194 <211> LENGTH: 29
      195 <212> TYPE: PRT
      196 <213> ORGANISM: Aspergillus oryzae
      198 <220> FEATURE:
      199 <221> NAME/KEY: VARIANT
      200 <222> LOCATION: (1)...(29)
      201 <223> OTHER INFORMATION: Xaa = Any Amino Acid
      203 <400> SEQUENCE: 6
W--> 204 Xaa Cys Arg Asp Asn Val Glu Gly Pro Xaa Tyr Ala Phe Ala Gly Arg
      205 1      5      10      15
      206 Gly Val Tyr Asp Ile Arg His Pro Tyr Asp Pro Asp Thr
      207      20      25
      209 <210> SEQ ID NO: 7
      210 <211> LENGTH: 20
      211 <212> TYPE: DNA
      212 <213> ORGANISM: Aspergillus oryzae
      214 <220> FEATURE:
      215 <221> NAME/KEY: misc_feature
      216 <222> LOCATION: (1)...(20)
      217 <223> OTHER INFORMATION: n = A,T,C or G
      219 <400> SEQUENCE: 7
W--> 220 tayggngggca ytayggccng
      222 <210> SEQ ID NO: 8

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RAW SEQUENCE LISTING

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223 <211> LENGTH: 21
224 <212> TYPE: DNA
225 <213> ORGANISM: Aspergillus oryzae
227 <400> SEQUENCE: 8
228 atraarttg ccaacraart c
230 <210> SEQ ID NO: 9
231 <211> LENGTH: 423
232 <212> TYPE: PRT
233 <213> ORGANISM: Aspergillus oryzae
235 <400> SEQUENCE: 9
236 Phe Val Lys Asn Ser Gly Ile Cys Glu Thr Thr Pro Gly Val Asn Gln
237 1 5 10 15
238 Tyr Ser Gly Tyr Leu Ser Val Gly Ser Asn Met Asn Met Trp Phe Trp
239 20 25 30
240 Phe Phe Glu Ala Arg Asn Asn Pro Gln Gln Ala Pro Leu Ala Ala Trp
241 35 40 45
242 Phe Asn Gly Gly Pro Gly Cys Ser Ser Met Ile Gly Leu Phe Gln Glu
243 50 55 60
244 Asn Gly Pro Cys His Phe Val Asn Gly Asp Ser Thr Pro Ser Leu Asn
245 65 70 75 80
246 Glu Asn Ser Trp Asn Asn Tyr Ala Asn Met Ile Tyr Ile Asp Gln Pro
247 85 90 95
248 Ile Gly Val Gly Phe Ser Tyr Gly Thr Asp Asp Val Thr Ser Thr Val
249 100 105 110
250 Thr Ala Ala Pro Tyr Val Trp Asn Leu Leu Gln Ala Phe Tyr Ala Gln
251 115 120 125
252 Arg Pro Glu Tyr Glu Ser Arg Asp Phe Ala Ile Phe Thr Glu Ser Tyr
253 130 135 140
254 Gly Gly His Tyr Gly Pro Glu Phe Ala Ser Tyr Ile Glu Gln Gln Asn
255 145 150 155 160
256 Ala Ala Ile Lys Ala Gly Ser Val Thr Gly Gln Asn Val Asn Ile Val
257 165 170 175
258 Ala Leu Gly Val Asn Asn Gly Trp Ile Asp Ser Thr Ile Gln Glu Lys
259 180 185 190
260 Ala Tyr Ile Asp Phe Ser Tyr Asn Asn Ser Tyr Gln Gln Ile Ile Asp
261 195 200 205
262 Ser Ser Thr Arg Asp Ser Leu Leu Asp Ala Tyr Asn Asn Gln Cys Leu
263 210 215 220
264 Pro Ala Leu Gln Gln Cys Ser Gln Ser Gly Ser Thr Ser Asp Cys Thr
265 225 230 235 240
266 Asn Ala Asp Ser Val Cys Tyr Gln Asn Ile Glu Gly Pro Ile Ser Ser
267 245 250 255
268 Ser Gly Asp Phe Asp Val Tyr Asp Ile Arg Glu Pro Ser Asn Asp Pro
269 260 265 270
270 Tyr Pro Pro Lys Thr Tyr Ser Thr Tyr Leu Ser Asp Pro Thr Val Val
271 275 280 285
272 Lys Ala Ile Gly Ala Arg Thr Asn Tyr Gln Glu Cys Pro Asn Gly Pro
273 290 295 300
274 Tyr Asn Lys Phe Ala Ser Thr Gly Asp Asn Pro Arg Ser Phe Leu Ser

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/712,338

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; Xaa Pos. 1
Seq#:4; Xaa Pos. 8,12
Seq#:6; Xaa Pos. 1,10
Seq#:7; N Pos. 6,19

VERIFICATION SUMMARY

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Input Set : A:\4990210 SEQLIST.TXT

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L:18 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0

L:175 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0

L:204 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0

L:220 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0